

# Review Exercises

1. Solve.

a)  $5 + x = -11$       b)  $y - 14 = 83$       c)  $14 - z = -14$   
 d)  $8 - t = -2$       e)  $w + 21 = -13$       f)  $17 = 19 - t$   
 g)  $15 = x + 23$       h)  $31 = y - 11$       i)  $-p - 16 = -21$

2. Solve.

a)  $5x = 45$       b)  $-15 = -3n$       c)  $\frac{1}{5}t = -3$       d)  $\frac{n}{14} = -7$   
 e)  $\frac{s}{5} = \frac{1}{3}$       f)  $8r = 56$       g)  $1.3x = 9.1$       h)  $\frac{x}{17} = \frac{39}{51}$

3. Solve.

a)  $6p - 3 = 15$       b)  $13 = 4 + 3x$       c)  $-6 - 2r = 8$   
 d)  $5 - 5y = 1$       e)  $8p - 3 = 7$       f)  $3x - \frac{1}{5} = 4$   
 g)  $3y - 7 = 14$       h)  $\frac{1}{4}x - \frac{2}{3} = 2$       i)  $2.7y - 3.1 = 5$   
 j)  $\frac{4}{5} - \frac{1}{3}x = \frac{1}{2}x$       k)  $1.69 - 1.3x = 0$       l)  $-64.5 + 2.5x = -2$

4. The cost,  $C$  cents, of making copies on a copying machine is given by the formula  $C = 90 + 3n$ , where  $n$  is the number of copies.

- a) What is the cost of making 200 copies?  
 b) How many copies can be made for \$6.00?

5. The cost,  $C$  dollars, of a telephone call from Vancouver, B.C., to St. John's, Newfoundland, is given by the formula  $C = 1.20 + 0.95(n - 1)$ , where  $n$  is the time in minutes, for the call, and  $n \geq 1$ .

- a) Find the cost of a call that lasts:  
 i) 1 min      ii) 3 min      iii) 5 min.  
 b) The charge for one call was \$24. How long was the call?

6. Solve.

a)  $5y - 2 = 3y + 4$       b)  $-7x + 6 = 2x - 3$   
 c)  $r - 3 = 2r + 4$       d)  $11 - 1.3x = 4.7x - 7$   
 e)  $4(x - 3) = -2$       f)  $-5(y + 3) = 14$   
 g)  $\frac{3}{8}(2 - 4x) = -\frac{5}{4} + \frac{x}{2}$       h)  $0.5(5x - 3) = 1.2$   
 i)  $3(1 - x) = -2(2 - x)$       j)  $-0.3(0.2a - 0.7) = 0.4(1.1a - 1.2)$   
 k)  $\frac{3}{4}(2x - 3) = \frac{5}{6}(-2 - 4x)$       l)  $-\frac{2}{3}(7 + 5a) = 1 + \frac{3}{2}(-4 + 5a)$   
 m)  $-2 + \frac{1}{5}(-4a + 6) = \frac{1}{10}(3 + 2a)$       n)  $\frac{5}{8}(-7c + 3) = -3 - \frac{3}{4}(3 - 7c)$   
 o)  $3 + \frac{1}{4}(5x + 3) = \frac{3}{8}(x - 4)$       p)  $-\frac{5}{2}(-4 + 3x) = 1 - \frac{3}{4}(3x + 4)$

7. Solve.

a)  $-2z - 3 + 5z = 6 - z - 9$   
 b)  $-8t + 7 - 5t = 9 - t - 11$   
 c)  $-13 - q - 9 = 5q - 9 - q$   
 d)  $-19 - 3r + 6 = 7r - 11 - r$   
 e)  $4(w - 5) - w = -9 - w + 7$   
 f)  $-7(p - 3) + 11 = 3p - 12 - p$   
 g)  $t + 17 - 2t = -3(t - 1) - 3$   
 h)  $9 - 3(1 - q) = 7 - 4(2 - q)$   
 i)  $-9(r + 3) - 9r = -3r - (3 - r) + 8$   
 j)  $3(7v + 8) - 9 = 14 - 2v + 6(3v - 4)$   
 k)  $5(6w - 3) - 7 = 17 + 3w - 5(2w + 1)$   
 l)  $-2(5x - 1) - 4 = 22 - 7x + 8(3x - 1)$

8. Solve and check.

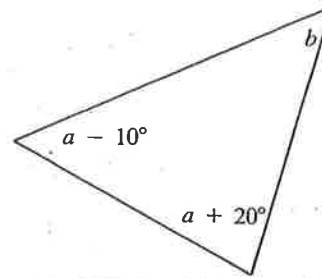
- a)  $3(x + 1) = 2x$
- b)  $4n - 2 = n + 1$
- c)  $8 - x = x - 8$
- d)  $12 - y = 3y - 14$
- e)  $4(t + 1) = 2t + (1 - t)$
- f)  $6(w - 2) = 3w + 2(w + 1)$
- g)  $7.2x - 7.5 - 1.7x = 4.6 + 4.4x$
- h)  $15(0.3 - z) + 14.5z = 2(0.5z - 10)$

9. The speed,  $s$  metres per second, of an object is given by the formula  $s = \frac{d}{t}$ , where  $t$  seconds is the time taken to travel a distance  $d$  metres. Find the distance travelled for each speed and time.

- a) 15 m/s for 3 s
- b) 2 m/s for 12 s
- c) 160 m/s for 15 s
- d) 180 m/s for 6 s
- e) 19 m/s for 13 s
- f) 80 km/h for 1.5 h

10. The sum of the angles of a triangle is  $180^\circ$ . For the triangle shown

- a) Find the value of  $a$  when  $b$  is:
  - i)  $30^\circ$
  - ii)  $60^\circ$ .
- b) Find the value of  $b$  when  $a$  is:
  - i)  $20^\circ$
  - ii)  $50^\circ$ .



Write an equation the solution of which will solve the problem for each of Exercises 12 to 16.

- 12. An airplane travels eight times as fast as a car. The difference in their speeds is 420 km/h. Find how fast each vehicle is travelling.
- 13. Find three consecutive numbers with a sum of 141.
- 14. In a cross-country marathon, Jack and Jill ran a total of 73 km. Jill ran 5 km farther than Jack. Find how far each person ran.
- 15. Jeanne is twice as old as Michel. The sum of their ages 3 years ago was 45 years. Find their ages now.
- 16. Five times a number decreased by 8 is 17. Find the number.
- 17. Jason is three times as old as Mark. The sum of their ages is 20 years. How old is Mark?
- 18. Jackie ran 2 km farther than Pat. They ran a total distance of 14 km. How far did each person run?
- 19. The combined mass of a dog and a cat is 21 kg. The dog is two-and-one-half times as heavy as the cat. What are their masses?
- 20. Roger has some dimes and quarters with a total value of \$2.50. If he has three more quarters than dimes, how many of each kind of coin does he have?
- 21. Mrs. Jenkins is three times as old as her son, Jerry. In 12 years, Mrs. Jenkins will only be twice as old. How old is Jerry now?
- 22. One number is seven times one-half of another number. The numbers differ by 35. What are the numbers?
- 23. Donna's average mark out of three tests was 84 out of 100. Her highest mark was one-and-one-quarter times her lowest mark. The middle mark was 81. What were Donna's marks on the three tests?

Answers

1. a) -16 b) 97 c) 28 d) 10 e) -34  
 f) 2 g) -8 h) 42 i) 5
2. a) 9 b) 5 c) -15 d) -98 e)  $\frac{5}{3}$   
 f) 7 g) 7 h) 13
3. a) 3 b) 3 c) -7 d)  $\frac{4}{5}$  e)  $\frac{5}{4}$  f)  $\frac{7}{5}$   
 g) 7 h)  $\frac{32}{3}$  i) 3 j)  $\frac{24}{25}$  k) 1.3 l) 25
4. a) \$6.90 b) 170 copies
5. a) i) \$1.20 ii) \$3.10 iii) \$5.00 b) 25 min
6. a) 3 b) 1 c) -7 d) 3 e)  $\frac{5}{2}$   
 f)  $\frac{29}{5}$  g) 1 h) 1.08 i) 1.4 j) 1.38  
 k)  $\frac{7}{58}$  l)  $\frac{2}{65}$  m) -1.1 n)  $\frac{57}{77}$  o) -6 p)  $\frac{16}{7}$
7. a) 0 b) 0.75 c) -2.6 d)  $-\frac{2}{9}$  e) 4.5  
 f)  $\frac{44}{9}$  g) -8.5 h) 7 i) -2 j) -5  
 k)  $\frac{34}{37}$  l)  $-\frac{16}{27}$  8. a) -3 b) 1 c) 8  
 d) 6.5 e) -1 f) 14 g) 11 h)  $\frac{49}{3}$
9. a) 45 m b) 24 m c) 2.4 km d) 1.08 km  
 e) 247 m f) 120 km
10. a) i) 70° ii) 55° b) i) 130° ii) 70°
12.  $8x - x = 420$  13.  $x + x + 1 + x + 2 = 141$   
 14.  $73 - x - x = 5$  15.  $x - 3 + 2x - 3 = 45$   
 16.  $5x - 8 = 17$  17. 5 years 18. 8 km, 6 km  
 19. 15 kg, 6 kg 20. 5 dimes, 8 quarters  
 21. 12 years 22. 49, 14 23. 76, 81, 95